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THE NEW LEAVEN IN AGRICULTURE

A radio talk by Dr. C. B. Smith, Chief, Office of Cooperative Extension-Work, delivered through Station WRC and 40 other stations associated with the National Broadcasting Company, Saturday, February 8, 1930, Eastern Standard Time.

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There is a new leaven at work in rural life. This leaven is resulting in increased efficiency in farming and a larger income for the farmer. It is raising the standard of living on the farm, increasing the social life, bringing in recreation and pageantry for young and old, promoting pride of occupation, quickening the thinking of farming people and is developing a great partnership between farmers and the government itself.

Three outstanding agencies are involved in this new movement.

The Cooperative Agricultural Extension Service may be mentioned first. This includes the County Agricultural Agents, Home Demonstration Agents, Boy's and Girls' 4-H Club Work, with its 6,000 paid leaders located in the counties, 250,000 voluntary farmer assistants and its 1,500,000 farm men and women demonstrators of better ways of doing things on the farm and in the home.

In the Agricultural Extension Work the technically trained agents of the Federal Department of Agriculture and of the State Agricultural Colleges and Experiment Stations sit down around a common table and study through with farm men and women in each community, agricultural conditions and problems and work out together ways of improvement. The agents of the government bring to this council table technical knowledge in agriculture and home making and the farm men and women bring their practical experience and intimate knowledge of local conditions. This is resulting in a new and enlarged rural life in America. Farm people are lifting their vision and broadening their outlook. No class of people in America today has such close relations with their government as do farming people. Through agricultural extension work and the work of the experiment stations and departments of agriculture, the American farmer today has become one of the most efficient agricultural producers in the world.

In any single year the American farm can and often does produce more corn or wheat or cotton or hogs than the people of the United States can consume or for which they are willing to pay the farmer the cost of production. Within the past few years the problem has become not so much one of production in the United States as of controlled production if the farmer is to get a reasonable return for his efforts. It is probably a fact that the bigger the crop the farmer produces above a certain limit, the less he gets for it. We are paying the farmer more for his crop of 350,000,000 bushels of potatoes this year than we did for his crop of  
(over)

462,000,000 bushels last year. The farmer lost heavily on last year's crop. He will get cost of production this year.

This cooperative agricultural extension work is reaching and influencing the families on over 3,000,000 farms and farm homes yearly and has enrolled in its work over 700,000 farm boys and girls.

There are a good many people who think the extension work with the boys and girls in the 4-H Clubs is the most significant phase of all rural extension and the chief leaven at work in rural life since it familiarizes them at the outset with the best things in agricultural and rural life, encourages them to take part and gives them expert training in the growing of crops, raising and care of stock and the keeping of accounts and making of reports. It teaches them Parliamentary practices, how to play and sing together, brings them together in groups socially, assembles them in camps and at the State agricultural colleges for short periods of a few days to a week, where they listen to the best teachers, and brings them, while at an impressionable age, into contact with educators and successful business men. We did not have that chance when you and I were boys on the farm.

The outstanding characteristic of all this extension work, adults and juniors, is that it meets the needs of the farm and farm family right now, as well as helps build for the future. The farmer is growing through his own efforts, aided by the government. He is thinking and cooperating as never before and his thinking is resulting in action that spells success and increased satisfaction.

Agricultural extension is giving especial attention to the building of fine rural homes. It is helping the farmer and his wife to beautify their home with shrubbery and flowers, trees and lawns on the outside and with suitable furnishings within. It encourages the use of labor-saving devices within the homes, so that there may be a little leisure for mother to read and be a companion to her husband and children, take her part in community life, get away from home occasionally to see and learn and grow mentally and spiritually.

Extension is encouraging high standards of living on the farms, running water in the homes, an auto, a radio, the telephone, magazines, a phonograph, insurance, medical attention when needed, high school and sometimes college education for the children, short courses at the agricultural colleges for father and mother, and with it all, that finest flower of all civilization, rural hospitality.

And the town and city man is interested in all this. Fifty per cent or more of the farm boys and girls must leave the farms. They are not needed there, for the ones that remain can grow all the food and clothing the nation needs. The town man is desirous that the overflow that comes from the country shall be clean, healthy, wholesome, educated young men and women.

But extension is not the whole story of the new leaven at work in rural America. Another powerful leaven in rural life is the Smith-Hughes vocational schools with their more than 4,000 vocational teachers in Agriculture and home economics. These schools are giving systematic

instruction to those over 14 years of age who want to go into the business of farming or home making. The work is most practical and is supplemented by six months' supervised home practice of everyone taking the instruction.

The farmer and his wife can thus get instruction on his individual problems through the Extension Service, and, through the Smith-Hughes vocational schools, can get systematic courses of instruction with supervised home work that builds permanent foundations. Both the extension work and the Smith-Hughes agricultural teaching work are in practically every rural county of the United States and within the reach of every farm family.

And now, last of all but most significant, has come into rural life and the nation the Federal Farm Board. This is full of promise for the farmer and the nation, for the nation prospers when the farm prospers.

The work of the Federal Farm Board promises to give point to much of the work of the Agricultural Extension Service. It is going to help market the farm crop which the Extension Service has helped the farmer to produce. It proposes to organize great cooperative selling associations, so that the farmers' merchandising facilities and bargaining powers may be increased and put on a par with industry. The Federal Farm Board represents the latest thinking of the nation. It climaxes, as it were, the work of agricultural extension and Smith-Hughes agricultural teaching, since it aims to secure such a price for the farmer's produce that he will be willing and desirous of continuing to live and produce on the farm.

Who can vision the future of American agriculture and rural life as a result of all this new leaven that is now at work in rural America?

Efficient production through the use of more machinery and horse power, family size farms a little larger than the present farms because one family can handle more land with tractors and corresponding machinery than with horses. And once a man has used tractors he no more cares to use horses than he cares to ride on a lumber wagon after riding in an auto. A little larger income from these larger farms, a little higher standard of living because of this larger income, more education on the farm, the ablest children remaining on the farm because it takes abler men and women to handle the larger farm unit, their larger equipment and their larger incomes. With increased efficiency fewer farmers can meet all the feed and fiber needs of the country.

More leisure, more time to give to the cultural, the altruistic and the spiritual. Agriculture is coming into its own. Many of the results of the new leaven are already visible. With all these new forces at work, supplementing what we already have, we may all have full faith in the future of agriculture in America.

1. The first part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom.

2. In the second part, we shall consider the question of the structure of the atom in the case of a single electron.

3. In the third part, we shall consider the question of the structure of the atom in the case of a multi-electron atom.

4. In the fourth part, we shall consider the question of the structure of the atom in the case of a molecule.

5. In the fifth part, we shall consider the question of the structure of the atom in the case of a crystal.

6. In the sixth part, we shall consider the question of the structure of the atom in the case of a liquid.

7. In the seventh part, we shall consider the question of the structure of the atom in the case of a gas.

8. In the eighth part, we shall consider the question of the structure of the atom in the case of a plasma.

9. In the ninth part, we shall consider the question of the structure of the atom in the case of a solid.

10. In the tenth part, we shall consider the question of the structure of the atom in the case of a liquid crystal.

11. In the eleventh part, we shall consider the question of the structure of the atom in the case of a polymer.

12. In the twelfth part, we shall consider the question of the structure of the atom in the case of a superconductor.